

# PCT

## REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum) A2087-WO

**Box No. I TITLE OF INVENTION**

OXIDATION REACTOR, PROCESS FOR PRODUCING (METH) ACRYLIC ACIDS, AND METHOD FOR ANALYZING EASILY-POLYMERIZABLE COMPOUNDS

**Box No. II APPLICANT**

This person is also inventor

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

Mitsubishi Chemical Corporation

5-2, Marunouchi 2-chome,  
Chiyoda-ku, Tokyo 100-0005 Japan

Telephone No. (03)3283-6962

Facsimile No. (03)3283-6984

Teleprinter No.

Applicant's registration No. with the Office

State (that is, country) of nationality:

JAPAN

State (that is, country) of residence:

JAPAN

This person is applicant  all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the Supplemental Box

**Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)**

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

YADA Shuhei

c/o Mitsubishi Chemical Corporation  
1, Toho-cho, Yokkaichi-shi, Mie 510-8530 Japan

This person is:

applicant only

applicant and inventor

inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

JAPAN

State (that is, country) of residence:

JAPAN

This person is applicant  all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the Supplemental Box

Further applicants and/or (further) inventors are indicated on a continuation sheet.

**Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

agent

common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

OKADA Kazuhiko

Kudan Kangyo Bldg. 6F, 10-1, Kudan-Kita 1-chome,  
Chiyoda-ku, Tokyo 102-0073 Japan

Telephone No. 03-5275-3533

Facsimile No. 03-5210-7189

Teleprinter No.

Agent's registration No. with the Office

Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

OGAWA Yasushi

c/o Mitsubishi Chemical Corporation  
1, Toho-cho, Yokkaichi-shi, Mie 510-8530 Japan

This person is:

applicant only  
 applicant and inventor  
 inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

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JAPAN

State (that is, country) of residence:

JAPAN

This person is applicant for the purposes of:

 all designated States all designated States except the United States of America the United States of America only the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

SUZUKI Yoshiro

c/o Mitsubishi Chemical Corporation  
1, Toho-cho, Yokkaichi-shi, Mie 510-8530 Japan

This person is:

applicant only  
 applicant and inventor  
 inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

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HOSAKA Hirochika

c/o Mitsubishi Chemical Corporation  
1, Toho-cho, Yokkaichi-shi, Mie 510-8530 Japan

This person is:

applicant only  
 applicant and inventor  
 inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

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State (that is, country) of residence:

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Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

SAMURA Yasuhiko

c/o Mitsubishi Chemical Corporation  
1, Toho-cho, Yokkaichi-shi, Mie 510-8530 Japan

This person is:

applicant only  
 applicant and inventor  
 inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

JAPAN

State (that is, country) of residence:

JAPAN

This person is applicant for the purposes of:

 all designated States all designated States except the United States of America the United States of America only the States indicated in the Supplemental Box

Further applicants and/or (further) inventors are indicated on another continuation sheet.

## Box No. V DESIGNATION OF STATES

Mark the applicable check-boxes below; at least one must be marked.

The following designations are hereby made under Rule 4.9(a):

## Regional Patent

**AP ARIPO Patent:** **GH** Ghana, **GM** Gambia, **KE** Kenya, **LS** Lesotho, **MW** Malawi, **MZ** Mozambique, **SD** Sudan, **SL** Sierra Leone, **SZ** Swaziland, **TZ** United Republic of Tanzania, **UG** Uganda, **ZM** Zambia, **ZW** Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT (*if other kind of protection or treatment desired, specify on dotted line*) . . . . .

**EA Eurasian Patent:** **AM** Armenia, **AZ** Azerbaijan, **BY** Belarus, **KG** Kyrgyzstan, **KZ** Kazakhstan, **MD** Republic of Moldova, **RU** Russian Federation, **TJ** Tajikistan, **TM** Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT

**EP European Patent:** **AT** Austria, **BE** Belgium, **BG** Bulgaria, **CH & LI** Switzerland and Liechtenstein, **CY** Cyprus, **CZ** Czech Republic, **DE** Germany, **DK** Denmark, **EE** Estonia, **ES** Spain, **FI** Finland, **FR** France, **GB** United Kingdom, **GR** Greece, **IE** Ireland, **IT** Italy, **LU** Luxembourg, **MC** Monaco, **NL** Netherlands, **PT** Portugal, **SE** Sweden, **SK** Slovakia, **TR** Turkey, and any other State which is a Contracting State of the European Patent Convention and of the PCT

**OA OAPI Patent:** **BF** Burkina Faso, **BJ** Benin, **CF** Central African Republic, **CG** Congo, **CI** Côte d'Ivoire, **CM** Cameroon, **GA** Gabon, **GN** Guinea, **GQ** Equatorial Guinea, **GW** Guinea-Bissau, **ML** Mali, **MR** Mauritania, **NE** Niger, **SN** Senegal, **TD** Chad, **TG** Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (*if other kind of protection or treatment desired, specify on dotted line*) . . . . .

National Patent (*if other kind of protection or treatment desired, specify on dotted line*):

<input checked="" type="checkbox"/> <b>AE</b> United Arab Emirates . . . . .	<input type="checkbox"/> <b>GM</b> Gambia . . . . .	<input checked="" type="checkbox"/> <b>NZ</b> New Zealand . . . . .
<input checked="" type="checkbox"/> <b>AG</b> Antigua and Barbuda . . . . .	<input checked="" type="checkbox"/> <b>HR</b> Croatia . . . . .	<input checked="" type="checkbox"/> <b>OM</b> Oman . . . . .
<input checked="" type="checkbox"/> <b>AL</b> Albania . . . . .	<input checked="" type="checkbox"/> <b>HU</b> Hungary . . . . .	<input checked="" type="checkbox"/> <b>PH</b> Philippines . . . . .
<input type="checkbox"/> <b>AM</b> Armenia . . . . .	<input checked="" type="checkbox"/> <b>ID</b> Indonesia . . . . .	<input checked="" type="checkbox"/> <b>PL</b> Poland . . . . .
<input type="checkbox"/> <b>AT</b> Austria . . . . .	<input checked="" type="checkbox"/> <b>IL</b> Israel . . . . .	<input type="checkbox"/> <b>PT</b> Portugal . . . . .
<input checked="" type="checkbox"/> <b>AU</b> Australia . . . . .	<input checked="" type="checkbox"/> <b>IN</b> India . . . . .	<input checked="" type="checkbox"/> <b>RO</b> Romania . . . . .
<input type="checkbox"/> <b>AZ</b> Azerbaijan . . . . .	<input checked="" type="checkbox"/> <b>IS</b> Iceland . . . . .	<input checked="" type="checkbox"/> <b>RU</b> Russian Federation . . . . .
<input checked="" type="checkbox"/> <b>BA</b> Bosnia and Herzegovina . . . . .	<input type="checkbox"/> <b>JP</b> Japan . . . . .	<input type="checkbox"/> <b>SD</b> Sudan . . . . .
<input checked="" type="checkbox"/> <b>BB</b> Barbados . . . . .	<input type="checkbox"/> <b>KE</b> Kenya . . . . .	<input type="checkbox"/> <b>SE</b> Sweden . . . . .
<input checked="" type="checkbox"/> <b>BG</b> Bulgaria . . . . .	<input type="checkbox"/> <b>KG</b> Kyrgyzstan . . . . .	<input checked="" type="checkbox"/> <b>SG</b> Singapore . . . . .
<input checked="" type="checkbox"/> <b>BR</b> Brazil . . . . .	<input checked="" type="checkbox"/> <b>KP</b> Democratic People's Republic of Korea . . . . .	<input checked="" type="checkbox"/> <b>SI</b> Slovenia . . . . .
<input type="checkbox"/> <b>BY</b> Belarus . . . . .	<input checked="" type="checkbox"/> <b>KR</b> Republic of Korea . . . . .	<input checked="" type="checkbox"/> <b>SK</b> Slovakia . . . . .
<input checked="" type="checkbox"/> <b>BZ</b> Belize . . . . .	<input type="checkbox"/> <b>KZ</b> Kazakhstan . . . . .	<input type="checkbox"/> <b>SL</b> Sierra Leone . . . . .
<input checked="" type="checkbox"/> <b>CA</b> Canada . . . . .	<input checked="" type="checkbox"/> <b>LC</b> Saint Lucia . . . . .	<input type="checkbox"/> <b>TJ</b> Tajikistan . . . . .
<input type="checkbox"/> <b>CH &amp; LI</b> Switzerland and Liechtenstein . . . . .	<input checked="" type="checkbox"/> <b>LK</b> Sri Lanka . . . . .	<input type="checkbox"/> <b>TM</b> Turkmenistan . . . . .
<input checked="" type="checkbox"/> <b>CN</b> China . . . . .	<input checked="" type="checkbox"/> <b>LR</b> Liberia . . . . .	<input checked="" type="checkbox"/> <b>TN</b> Tunisia . . . . .
<input checked="" type="checkbox"/> <b>CO</b> Colombia . . . . .	<input type="checkbox"/> <b>LS</b> Lesotho . . . . .	<input type="checkbox"/> <b>TR</b> Turkey . . . . .
<input checked="" type="checkbox"/> <b>CR</b> Costa Rica . . . . .	<input checked="" type="checkbox"/> <b>LT</b> Lithuania . . . . .	<input checked="" type="checkbox"/> <b>TT</b> Trinidad and Tobago . . . . .
<input checked="" type="checkbox"/> <b>CU</b> Cuba . . . . .	<input type="checkbox"/> <b>LU</b> Luxembourg . . . . .	<input type="checkbox"/> <b>TZ</b> United Republic of Tanzania . . . . .
<input checked="" type="checkbox"/> <b>CZ</b> Czech Republic . . . . .	<input checked="" type="checkbox"/> <b>LV</b> Latvia . . . . .	<input checked="" type="checkbox"/> <b>UA</b> Ukraine . . . . .
<input type="checkbox"/> <b>DE</b> Germany . . . . .	<input checked="" type="checkbox"/> <b>MA</b> Morocco . . . . .	<input type="checkbox"/> <b>UG</b> Uganda . . . . .
<input type="checkbox"/> <b>DK</b> Denmark . . . . .	<input checked="" type="checkbox"/> <b>MD</b> Republic of Moldova . . . . .	<input checked="" type="checkbox"/> <b>US</b> United States of America . . . . .
<input checked="" type="checkbox"/> <b>DM</b> Dominica . . . . .	<input checked="" type="checkbox"/> <b>MG</b> Madagascar . . . . .	<input checked="" type="checkbox"/> <b>UZ</b> Uzbekistan . . . . .
<input checked="" type="checkbox"/> <b>DZ</b> Algeria . . . . .	<input checked="" type="checkbox"/> <b>MK</b> The former Yugoslav Republic of Macedonia . . . . .	<input checked="" type="checkbox"/> <b>VN</b> Viet Nam . . . . .
<input checked="" type="checkbox"/> <b>EC</b> Ecuador . . . . .	<input checked="" type="checkbox"/> <b>MN</b> Mongolia . . . . .	<input checked="" type="checkbox"/> <b>YU</b> Yugoslavia . . . . .
<input checked="" type="checkbox"/> <b>EE</b> Estonia . . . . .	<input type="checkbox"/> <b>MW</b> Malawi . . . . .	<input checked="" type="checkbox"/> <b>ZA</b> South Africa . . . . .
<input type="checkbox"/> <b>ES</b> Spain . . . . .	<input checked="" type="checkbox"/> <b>MX</b> Mexico . . . . .	<input type="checkbox"/> <b>ZM</b> Zambia . . . . .
<input type="checkbox"/> <b>FI</b> Finland . . . . .	<input type="checkbox"/> <b>MZ</b> Mozambique . . . . .	<input type="checkbox"/> <b>ZW</b> Zimbabwe . . . . .
<input type="checkbox"/> <b>GB</b> United Kingdom . . . . .	<input checked="" type="checkbox"/> <b>NO</b> Norway . . . . .	
<input checked="" type="checkbox"/> <b>GD</b> Grenada . . . . .		
<input checked="" type="checkbox"/> <b>GE</b> Georgia . . . . .		
<input type="checkbox"/> <b>GH</b> Ghana . . . . .		

Check-boxes below reserved for designating States which have become party to the PCT after issuance of this sheet:

**Saint Vincent and the Grenadines** . . . . .  . . . . .  . . . . .

**Republic of Seychelles** . . . . .  . . . . .  . . . . .

**Precautionary Designation Statement:** In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (*Confirmation (including fees) must reach the receiving Office within the 15-month time limit.*)

Box No. VI PRIORITY CLAIM				
The priority of the following earlier application(s) is hereby claimed:				
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application:*	international application: receiving Office
item (1) 06.12.01	2001-372954	Japan		
item (2) 06.12.01	2001-372955	Japan		
item (3) 27.12.01	2001-396344	Japan		
item (4)				
item (5)				
<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.				
The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) ( <i>only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office</i> ) identified above as:				
<input type="checkbox"/> all items <input type="checkbox"/> item (1) <input type="checkbox"/> item (2) <input type="checkbox"/> item (3) <input type="checkbox"/> item (4) <input type="checkbox"/> item (5) <input type="checkbox"/> other, see Supplemental Box				
<i>* Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(ii)): .....</i>				
Box No. VII INTERNATIONAL SEARCHING AUTHORITY				
Choice of International Searching Authority (ISA) ( <i>if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used</i> ):				
ISA / ....., JP ....., .				
Request to use results of earlier search; reference to that search ( <i>if an earlier search has been carried out by or requested from the International Searching Authority</i> ):				
Date (day/month/year)	Number	Country (or regional Office)		
Box No. VIII DECLARATIONS				
The following declarations are contained in Boxes Nos. VIII (i) to (v) ( <i>mark the applicable check-boxes below and indicate in the right column the number of each type of declaration</i> ):				Number of declarations
<input type="checkbox"/> Box No. VIII (i)	Declaration as to the identity of the inventor	:		
<input type="checkbox"/> Box No. VIII (ii)	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	:		
<input type="checkbox"/> Box No. VIII (iii)	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	:		
<input type="checkbox"/> Box No. VIII (iv)	Declaration of inventorship (only for the purposes of the designation of the United States of America)	:		
<input type="checkbox"/> Box No. VIII (v)	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	:		

**Box No. IX CHECK LIST; LANGUAGE OF FILING**

<b>This international application contains:</b>		<b>This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):</b>	<b>Number of items</b>
<b>(a) the following number of sheets in paper form:</b>			
request (including declaration sheets)	: 5		
description (excluding sequence listing part)	: 17		
claims	: 2		
abstract	: 1		
drawings	: 4		
<b>Sub-total number of sheets</b>	<b>: 29</b>		
sequence listing part of description (actual number of sheets if filed in paper form, whether or not also filed in computer readable form; see (b) below)	: _____		
<b>Total number of sheets</b>	<b>: 29</b>		
<b>(b) sequence listing part of description filed in computer readable form</b>			
(i) <input type="checkbox"/> only (under Section 801(a)(i))			
(ii) <input type="checkbox"/> in addition to being filed in paper form (under Section 801(a)(ii))			
<b>Type and number of carriers</b> (diskette, CD-ROM, CD-R or other) on which the sequence listing part is contained (additional copies to be indicated under item 9(ii), in right column):			
.....			
<b>Figure of the drawings which should accompany the abstract:</b>	<b>Language of filing of the international application:</b>	<b>JAPANESE</b>	

**Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE***Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).*

OKADA Kazuhiko

<b>For receiving Office use only</b>	
1. Date of actual receipt of the purported international application:	
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority (if two or more are competent): <b>ISA / JP</b>	
6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid	
<b>For International Bureau use only</b>	
2. Drawings: <input type="checkbox"/> received:  <input type="checkbox"/> not received:	

Date of receipt of the record copy by the International Bureau: